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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,274	08/06/2001	William R. Bidermann	1039.013	9059
22186	7590	10/17/2003	EXAMINER	
MENDELSON AND ASSOCIATES PC 1515 MARKET STREET SUITE 715 PHILADELPHIA, PA 19102			LUU, THANH X	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/923,274

Applicant(s)

BIDERMANN ET AL.

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 35-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-41, 44, 45, 49-55, 58 and 59 is/are rejected.
- 7) ☒ Claim(s) 42, 43, 46-48, 56, 57 and 60-62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to amendments and remarks filed July 23, 2003.  
Claims 35-62 are currently pending.

#### ***Claim Objections***

1. Claims 37, 39, 41, 51, 53 and 55 are objected to because of the following informalities:

In claims 37, 39, 41, 51, 53 and 55, the claims should end in a period.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 35-41 and 49-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Franklin et al. (U.S. Patent 6,034,725).

Regarding claims 35-41 and 49-55, Franklin et al. disclose (see Figure 3) an integrated circuit and method having an image sensor, wherein the image sensor has an array of one or more pixels, wherein at least one pixel comprises: a photoelement (20) formed on a substrate (1) and configured to generate an electrical signal in response to incident light; associated circuitry (30) formed on the substrate and configured to process the electrical signal generated in the photoelement; and two or more insulator structures (4, 9, 10) formed on the substrate and configured to inhibit

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flow of electricity between at least one of the photoelement and the associated circuitry or the pixel and an adjacent pixel in the array, wherein the two or more insulator structures comprise an insulator layer (4) between the substrate and at least one of the photoelement or the associated circuitry; and at least one lateral insulator structure (9, 10) between at least one of the photoelement and the associated circuitry or the pixel and the adjacent pixel, wherein the at least one lateral insulator structure is in direct physical contact with the insulator layer to form a contiguous electrical isolation barrier. Franklin et al. also disclose (see Figure 3) the at least one lateral insulator structure (9, 10) is between the photoelement (20) and the associated circuitry (30) or between the pixel (left instance of 20) and the adjacent pixel (right instance of 20); and the contiguous electrical barrier inhibits the flow of electricity between the photoelement and the associated circuitry or the pixel and the adjacent pixel, and the insulator layer (4) is between the substrate and both the photoelement and the associated circuitry.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 44 and 58 are rejected under 35 U.S.C. 103(a) as being obvious over Franklin et al. in view of Koyama (U.S. Patent 5,323,052).

Regarding claims 44 and 58, Franklin et al. further disclose (see Figures) the image sensor is a CMOS image sensor, the one or more insulator structures comprise

an oxide of silicon (see column 4, lines 60-64) and the photoelement is a photodiode. Franklin et al. do not specifically disclose a microlens positioned over the photoelement. Koyama teaches (see Figures) providing a microlens in an image sensor device to provide a wider angular response. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a microlens to the sensor of Franklin et al. in view of Koyama to improve detection with a wider angular response.

6. Claims 45 and 59 are rejected under 35 U.S.C. 103(a) as being obvious over Franklin et al. in view of the publication of Sasaki (JP 11-284169, published October 15, 1999).

Regarding claims 45 and 59, Franklin et al. disclose the claimed invention as set forth above. Franklin et al. do not specifically disclose a mask layer formed on top of at least some of the associated circuitry. Sasaki teaches (see Figure 2) the pixel further comprises a mask layer (82) that inhibits light incident at the associated circuitry from contributing to the electrical signal at the photoelement. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a mask layer in the apparatus of Franklin et al. in view of Sasaki to reduce interference and improve detection.

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***Allowable Subject Matter***

7. Claims 42, 43, 46-48, 56, 57 and 60-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: an integrated circuit having an image sensor, as claimed, more specifically in combination forming the photoelement and circuitry within a common insulating layer and providing the layer with different thicknesses as claimed, is not disclosed or made obvious by the prior art of record.

***Response to Arguments***

9. Applicant's arguments with respect to claims 35-62 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

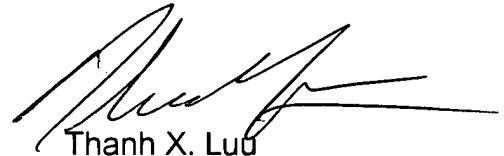
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl  
October 1, 2003



Thanh X. Luu  
Patent Examiner